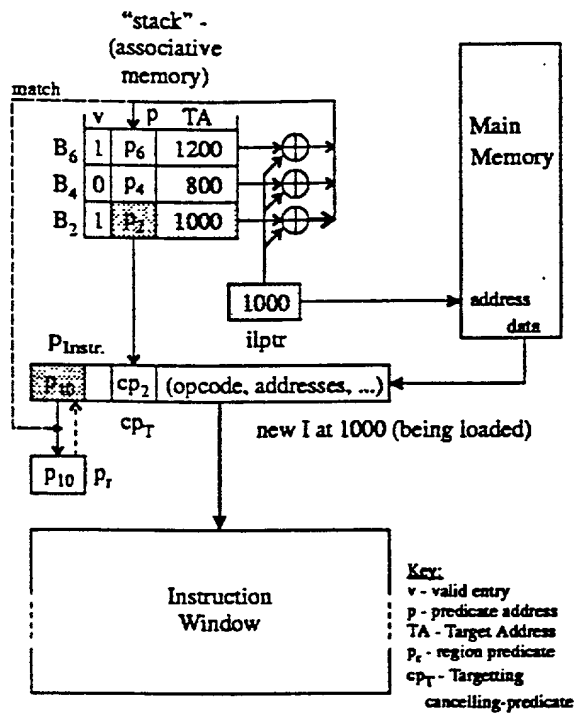


FIG. 1



Snapshot taken at t = 9+ of Example 5.
- new I matches target address in stack

FIG. 2

				predicate-assignment (at load time)				predicate-use (at code execution time)				
load time	address	code		stack				$p_{in}=p_i$	cp_{in}	p_{out}	cp_{out}	p_i - condition for I execution
				B	v	p	TA					
1	100	I ₁	z = x op y				empty	1	0	$p_1=1$	-	1
2	200	B ₂	if (bc ₂) goto 400	B ₂	1	p ₂	400	1	0	$p_2=\overline{bc}_2$	bc ₂	1
3	300	I ₃		B ₂	1	p ₂	400	p ₂	0	-	-	\overline{bc}_2
4	400	I ₄					empty	p ₂	cp ₂	\overline{bc}_2+bc_2	-	$\overline{bc}_2+bc_2=1$
5	500	I ₅					empty	p ₄	0	-	-	p ₄ =1
6	600	B ₆	if (bc ₆) goto 800	B ₆	1	p ₆	800	p ₄	0	$\overline{bc}_6 \cdot p_4$	bc ₆ · p ₄	1
7	700	I ₇		B ₆	1	p ₆	800	p ₆	0	-	-	\overline{bc}_6
8	800	I ₈					empty	p ₆	cp ₆	\overline{bc}_6+bc_6	-	$\overline{bc}_6+bc_6=1$
9	900	I ₉					empty	p ₈	0	-	-	p ₆ =1

Equations - for "I": $p_i=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc} \cdot p_{in}$, $cp_{out}=bc \cdot p_{in}$

FIG. 3

load time	address	code		predicate-assignment (at load time)		predicate-use (at code execution time)			
				stack		$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out} p_i - condition for I execution
1	100	I_1	$z = x \text{ op } y$	B	v p TA empty	1	0	$p_1=1$	- 1
2	200	B_2	if (bc_2) goto 800	B ₂	1 P ₂ 800	1	0	$p_2=\overline{bc}_2$	bc_2 1
3	300	I_3		B ₂	1 P ₂ 800	P_2	0	-	- \overline{bc}_2
4	400	B_4	if (bc_4) goto 600	B ₄	1 P ₄ 600	P_2	0	$\overline{bc}_4 \cdot P_2$	$bc_4 \cdot P_2$ 1
5	500	I_5		B ₂	1 P ₂ 800	P_4	0	-	- $\overline{bc}_2 \cdot \overline{bc}_4$
6	600	I_6		B ₂	1 P ₂ 800	P_4	cp_4	p_4+cp_4	- $\overline{bc}_4 \cdot \overline{bc}_2 + bc_4 \cdot \overline{bc}_2 = \overline{bc}_2$
7	700	I_7		B ₂	1 P ₂ 800	P_6	0	-	- \overline{bc}_2
8	800	I_8			empty	P_6	cp_2	p_6+cp_2	- $\overline{bc}_2+bc_2=1$
9	900	I_9			empty	P_8	0	-	- 1

Equations - for "T": $p_i=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc} \cdot p_{in}$, $cp_{out}=bc \cdot p_{in}$

FIG. 4

load time	address	code		predicate-assignment (at load time)		predicate-use (at code execution time)			
				stack		$p_{in}=p_r$	cp_{in}	p_{out}	cp_{out} p_i - condition for I execution
1	100	I_1	$z = x \text{ op } y$	B	v p TA empty	1	0	$p_1=1$	- 1
2	200	B_2	if (bc_2) goto 600	B ₂	1 P ₂ 600	1	0	$p_2=\overline{bc}_2$	bc_2 1
3	300	I_3		B ₂	1 P ₂ 600	p_2	0	-	- \overline{bc}_2
4	400	B_4	if (bc_4) goto 800	B ₄ B ₂	1 P ₄ 800 1 P ₂ 600	p_2	0	$\overline{bc}_4 \cdot p_2$	$bc_4 \cdot p_2$ 1
5	500	I_5		B ₄ B ₂	1 P ₄ 800 1 P ₂ 600	p_4	0	-	- $\overline{bc}_4 \cdot \overline{bc}_2$
6	600	I_6		B ₄ B ₂	1 P ₄ 800 0 P ₂ 600	p_4	cp_2	p_4+cp_2	- $(\overline{bc}_4 \cdot \overline{bc}_2)+bc_2=\overline{bc}_4+bc_2$
7	700	I_7		B ₄ B ₂	1 P ₄ 800 0 P ₂ 600	p_6	0	-	- \overline{bc}_4+bc_2
8	800	I_8			empty	p_6	cp_4	p_6+cp_4	- $\overline{bc}_4+bc_2+(bc_4 \cdot \overline{bc}_2)=1$
9	900	I_9			empty	p_8	0	-	- 1

Equations - for "T": $p_i=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc} \cdot p_{in}$, $cp_{out}=bc \cdot p_{in}$

FIG. 5

load time	address	code		predicate-assignment (at load time)				predicate-use (at code execution time)				
				stack				$P_{in}=P_r$	CP_{in}	P_{out}	CP_{out}	P_1 - condition for I execution
				B	v	p	TA					
1	100	I_1	$z = x \text{ op } y$	empty				1	0	$p_1=1$	-	1
2	200	B_2	if (bc_2) goto 1000	B_2	1	P_2	1000	1	0	$p_2=\overline{bc}_2$	bc_2	1
3	300	I_3		B_2	1	P_2	1000	p_2	0	-	-	\overline{bc}_2
4	400	B_4	if (bc_4) goto 800	B_4	1	P_4	800	p_2	0	$\overline{bc}_4 \cdot p_2$	$bc_4 \cdot p_2$	1
				B_2	1	P_2	1000					
5	500	I_5		B_4	1	P_4	800	p_4	0	-	-	$\overline{bc}_4 \cdot \overline{bc}_2$
			B_2	1	P_2	1000						
6	600	B_6	if (bc_6) goto 1200	B_6	1	P_6	1200	p_4	0	$\overline{bc}_6 \cdot p_4$	$bc_6 \cdot p_4$	1
				B_4	1	P_4	800					
				B_2	1	P_2	1000					
7	700	I_7		B_6	1	P_6	1200	p_6	0	-	-	$\overline{bc}_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2$
			B_4	1	P_4	800						
			B_2	1	P_2	1000						
8	800	I_8		B_6	1	P_6	1200	p_6	cp_4	p_6+cp_4	-	$(\overline{bc}_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2) + (bc_4 \cdot \overline{bc}_2)$ $= (\overline{bc}_6 + bc_4) \overline{bc}_2$
			B_4	0	P_4	800						
			B_2	1	P_2	1000						
9	900	I_9		B_6	1	P_6	1200	p_8	0	-	-	$(\overline{bc}_6 + bc_4) \overline{bc}_2$
			B_4	0	P_4	800						
			B_2	1	P_2	1000						
10	1000	I_{10}		B_6	1	P_6	1200	p_8	cp_2	p_8+cp_2	-	$((\overline{bc}_6 + bc_4) \overline{bc}_2) + bc_2$ $= \overline{bc}_6 + bc_4 + bc_2$
11	1100	I_{11}	B_6	1	P_6	1200						
12	1200	I_{12}		empty				p_{10}	cp_6	$p_{10}+cp_6$	-	$\overline{bc}_6 + bc_4 + bc_2 + (bc_6 \cdot \overline{bc}_4 \cdot \overline{bc}_2)$ $= 1$
13	1300	I_{13}		empty				p_{12}	0	-	-	1

Equations - for "T": $p_1=p_{out}=p_{in}+cp_{in}$; for "B": $p_{out}=\overline{bc} \cdot p_{in}$, $cp_{out}=\overline{bc} \cdot p_{in}$

FIG. 6